Letters to the Editor

The Board of Editors will not hold itself responsible for opinions expressed in the letters published in this section. The notes containing reports of new work communicated for this section should not contain many figures and should not exceed 500 words in length. The contributions must reach the Assistant Editor not later than the 15th of the second month preceding that of the issue in which the letter is to appear. No proof will be sent to the authors.

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A NOTE ON THE SPECTRUM OF Br IV

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With the help of the extensive data on the spark spectrum of bromine obtained in connection with the analyses of Br II and Br III spectra (Bhupala Rao, 1956 and 1958), an attempt has been made to extend the analysis of the spectrum of trebly ionised bromine, which was worked out only partially by A. S. Rao and S. G. Krishna Murty (1934). A few additional lines have been classified and the scheme of classification suggested previously has been observed to be correct. The newly classified lines are listed below.

TABLE I

Intensity Cond. dis.	λ (air) Å	ν (vac) cm^{-1}	Classification	
3	3380.56	30473.9	$5s\ {}^3P^0_2 - 5p$	${}^3D_2$
7 H	2907 71	34381.3	$5s\ {}^3P^0_2 - 5p$	${}^3D_3$
0	2874.57	34777.6	$5s\ {}^3P^0_1 - 5p$	${}^3D_1$
6	2842.88	35165.3	$5s\ {}^3P^0_1 - 5p$	${}^3D_2$
8 H	2772.62	36056.4	$5s\ {}^3P^0_0 - 5p$	${}^3D_1$
7 H	2570.83	38886.3	$4d\ {}^3P^0_1 - 5p$	${}^3P_1$
5	2411.64	41452.9	$4d\ {}^3P^0_1 - 5p$	${}^3P_2$
7	2257.24	44288.1	$4d\ {}^3P^0_2 - 5p$	${}^3D_3$
7	2204.50	45347.6	$4d\ {}^3P^0_2 - 5p$	${}^3P_2$

Calculated with respect to the ground level $4p^2\ ^3p_0$ as zero the newly identified levels are

$$\begin{aligned} 5p\ ^3D_1 &= 216674 \\ & \quad\ 388 \\ ^3D_2 &= 217062 \\ & \quad\ 3907 \\ ^3D_3 &= 220969 \end{aligned}$$

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Bhupala Rao, Y., 1956, *Ind. J. Phys.*, **30**, 371.
Bhupala Rao, Y., 1958, *Ind. J. Phys.*, **32**, 497.
Rao, A. S. and Krishna Murty, S. G., 1934, *Proc. Phys. Soc.*, **46**, 351.

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ON THE MAGNETIC PERTURBATION OF AN ELECTRON BEAM

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A sharp edge of the usual razor blade of hard steel was employed as a specimen for the experiment. The remanence of this specimen was about 10^4 gausses. A fine electron beam (diameter of the cross-section being 0.05 mm nearly) grazed the edge of the specimen of the maximum gradient of the magnetic field. An electron diffraction pattern here obtained is shown in figure 1. In this figure we see that the diffraction rings are abnormally perturbed. The central spot found in figure 1 was optically 12 times enlarged in order to investigate the perturbation suffered by the incident beam in passing through the magnetic gradient This perturbation is recognizable in figure 2. In this figure we see that a unique incident beam is splitted into many a beam. This singular phenomenon should be elucidated in the present study.